#3

SEQUENCE LISTING

<110> Hedley, Mary Lynne

<120> METHODS OF TREATING BLADDER DISORDERS

<130> 08191-022001

<140> 10/074,956
<141> 2002-02-12

<150> 60/268,175
<151> 2001-02-12

<160> 29

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 19
<212> DNA
<213> Homo sapiens

<400> 1
tccatgtcgc tctgatgct 19

<210> 2
<211> 20
<212> DNA
<213> Homo sapiens

<400> 2
tccatgtcgt tcctgatgct 20

<210> 3
<211> 24
<212> DNA
<213> Homo sapiens

<400> 3
tcgtcgtttt gtcgtttttgt cgtt 24

<210> 4
<211> 13
<212> PRT
<213> Homo sapiens

<400> 4
Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val
1 5 10

<210> 5
<211> 3
<212> PRT

<213> Homo sapiens

<400> 5
Lys Pro Val
1

<210> 6
<211> 5
<212> PRT
<213> Homo sapiens

<400> 6
Glu His Phe Arg Trp
1 5

<210> 7
<211> 52
<212> PRT
<213> Homo sapiens

<400> 7
Met Pro Arg Ser Cys Cys Ser Arg Ser Gly Ala Leu Leu Leu Ala Leu
1 5 10 15
Leu Leu Gln Ala Ser Met Glu Val Arg Gly Trp Cys Leu Glu Ser Ser
20 25 30
Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Glu Cys Ile Arg
35 40 45
Ala Cys Lys Pro
50

<210> 8
<211> 70
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 8
Met Pro Arg Ser Cys Cys Ser Arg Ser Gly Ala Leu Leu Leu Ala Leu
1 5 10 15
Leu Leu Gln Ala Ser Met Glu Val Arg Gly Trp Cys Leu Glu Ser Ser
20 25 30
Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn Leu Leu Glu Cys Ile Arg
35 40 45
Ala Cys Lys Pro Arg Glu Gly Lys Arg Ser Tyr Ser Met Glu His Phe
50 55 60
Arg Trp Gly Lys Pro Val
65 70

<210> 9
<211> 26
<212> PRT
<213> Homo sapiens

<400> 9
Met Pro Arg Ser Cys Cys Ser Arg Ser Gly Ala Leu Leu Leu Ala Leu

1 5 10 15
Leu Leu Gln Ala Ser Met Glu Val Arg Gly
20 25

<210> 10
<211> 25
<212> PRT
<213> Homo sapiens

<400> 10
Met Ala Ile Ser Gly Val Pro Val Leu Gly Phe Phe Ile Ile Ala Val
1 5 10 15
Leu Met Ser Ala Gln Glu Ser Trp Ala
20 25

<210> 11
<211> 26
<212> PRT
<213> Homo sapiens

<400> 11
Trp Cys Leu Glu Ser Ser Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn
1 5 10 15
Leu Leu Glu Cys Ile Arg Ala Cys Lys Pro
20 25

<210> 12
<211> 5
<212> PRT
<213> Homo sapiens

<400> 12
Lys Phe Glu Arg Gln
1 5

<210> 13
<211> 5
<212> PRT
<213> Homo sapiens

<400> 13
Gln Arg Glu Phe Lys
1 5

<210> 14
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Linker sequence

<400> 14
Gly Gly Val Gly Gly
1 5

<210> 15

<211> 247
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<222> (23)...(232)

<223> Synthetic construct

<400> 15
aagcttgcgc gctgcctgga ag atg ccg aga tcg tgc tgc agc cgc tcg ggg 52
Met Pro Arg Ser Cys Cys Ser Arg Ser Gly
1 5 10

gcc ctg ttg ctg gcc ttg ctg ctt cag gcc tcc atg gaa gtg cgt ggc 100
Ala Leu Leu Leu Ala Leu Leu Leu Gln Ala Ser Met Glu Val Arg Gly
15 20 25

tgg tgc ctg gag agc agc cag tgt cag gac ctc acc acg gaa agc aac 148
Trp Cys Leu Glu Ser Ser Gln Cys Gln Asp Leu Thr Thr Glu Ser Asn
30 35 40

ctg ctg gag tgc atc cgg gcc tgc aag ccc cgc gag ggc aag cgc tcc 196
Leu Leu Glu Cys Ile Arg Ala Cys Lys Pro Arg Glu Gly Lys Arg Ser
45 50 55

tac tcc atg gag cac ttc cgc tgg ggc aag ccg gtg taaggatccc 242
Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val
60 65 70

tcgag 247

<210> 16
<211> 10
<212> PRT
<213> Homo sapiens

<400> 16
Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
1 5 10

<210> 17
<211> 11
<212> PRT
<213> Homo sapiens

<400> 17
Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly Ser
1 5 10

<210> 18
<211> 20
<212> PRT
<213> Homo sapiens

<400> 18

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10 15
Gly Gly Gly Gly
20

<210> 19
<211> 17
<212> PRT
<213> Homo sapiens

<400> 19
Ser Ser Ser Ser Gly Ser Ser Ser Ser Gly Ser Ser Ser Ser Gly Ser
1 5 10 15
Pro

<210> 20
<211> 18
<212> PRT
<213> Mus musculus

<400> 20
Met Lys Trp Val Thr Phe Leu Leu Leu Leu Phe Val Ser Gly Ser Ala
1 5 10 15
Phe Ser

<210> 21
<211> 18
<212> PRT
<213> Homo sapiens

<400> 21
Met Lys Trp Val Thr Phe Ile Ser Leu Leu Phe Leu Phe Ser Ser Ala
1 5 10 15
Tyr Ser

<210> 22
<211> 6
<212> PRT
<213> Homo sapiens

<400> 22
Arg Gly Val Phe Arg Arg
1 5

<210> 23
<211> 195
<212> PRT
<213> Mus musculus

<400> 23
Glu Ala His Lys Ser Glu Ile Ala His Arg Tyr Asn Asp Leu Gly Glu
1 5 10 15
Gln His Phe Lys Gly Leu Val Leu Ile Ala Phe Ser Gln Tyr Leu Gln
20 25 30

```
Lys Cys Ser Tyr Asp Glu His Ala Lys Leu Val Gln Glu Val Thr Asp
        35                  40                  45
Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Ala Asn Cys Asp Lys
    50                  55                  60
Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Ala Ile Pro Asn Leu
65                  70                  75                  80
Arg Glu Asn Tyr Gly Glu Leu Ala Asp Cys Cys Thr Lys Gln Glu Pro
                85                  90                  95
Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Ser Leu
            100                 105                 110
Pro Pro Phe Glu Arg Pro Glu Ala Glu Ala Met Cys Thr Ser Phe Lys
        115                 120                 125
Glu Asn Pro Thr Thr Phe Met Gly His Tyr Leu His Glu Val Ala Arg
    130                 135                 140
Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Tyr Tyr Ala Glu Gln
145                 150                 155                 160
Tyr Asn Glu Ile Leu Thr Gln Cys Cys Ala Glu Ala Asp Lys Glu Ser
                165                 170                 175
Cys Leu Thr Pro Lys Leu Asp Gly Val Lys Glu Lys Ala Leu Val Ser
            180                 185                 190
Ser Val Arg
        195

<210> 24
<211> 195
<212> PRT
<213> Homo sapiens

<400> 24
Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu
 1               5                  10                  15
Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln
            20                  25                  30
Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu
        35                  40                  45
Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys
    50                  55                  60
Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu
65                  70                  75                  80
Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro
                85                  90                  95
Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu
            100                 105                 110
Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His
        115                 120                 125
Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg
    130                 135                 140
Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg
145                 150                 155                 160
Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala
                165                 170                 175
Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser
            180                 185                 190
Ser Ala Lys
        195

<210> 25
```

<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Linker sequence

<400> 25
Gly Gly Tyr Gly Gly
 1   5

<210> 26
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Furin site

<400> 26
Arg Ile Arg Arg
 1

<210> 27
<211> 241
<212> PRT
<213> Homo sapiens

<400> 27
Met Lys Trp Val Thr Phe Ile Ser Leu Leu Phe Leu Phe Ser Ser Ala
 1   5   10   15
Tyr Ser Arg Gly Val Phe Arg Arg Asp Ala His Lys Ser Glu Val Ala
            20   25   30
His Arg Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu
        35   40   45
Ile Ala Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val
    50   55   60
Lys Leu Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp
65   70   75   80
Glu Ser Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp
                85   90   95
Lys Leu Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala
            100   105   110
Asp Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln
        115   120   125
His Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val
    130   135   140
Asp Val Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys
145   150   155   160
Lys Tyr Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro
                165   170   175
Glu Leu Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys
            180   185   190
Cys Gln Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu
        195   200   205
Leu Arg Asp Glu Gly Lys Ala Ser Ser Ala Lys Gly Gly Tyr Gly Gly
    210   215   220

```
Arg Ile Arg Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro
225                 230                 235                 240
Val
```

<210> 28
<211> 268
<212> PRT
<213> Homo sapiens

<400> 28

```
Met Lys Trp Val Thr Phe Ile Ser Leu Leu Phe Leu Phe Ser Ser Ala
 1               5                  10                  15
Tyr Ser Arg Gly Val Phe Arg Arg Asp Ala His Lys Ser Glu Val Ala
            20                  25                  30
His Arg Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu
        35                  40                  45
Ile Ala Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val
    50                  55                  60
Lys Leu Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp
65                  70                  75                  80
Glu Ser Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp
                85                  90                  95
Lys Leu Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala
            100                 105                 110
Asp Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln
        115                 120                 125
His Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val
    130                 135                 140
Asp Val Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys
145                 150                 155                 160
Lys Tyr Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro
                165                 170                 175
Glu Leu Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys
            180                 185                 190
Cys Gln Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu
        195                 200                 205
Leu Arg Asp Glu Gly Lys Ala Ser Ser Ala Lys Gly Gly Tyr Gly Gly
    210                 215                 220
Arg Ile Arg Arg Ser Tyr Ser Met Glu His Phe Arg Trp Asp Glu Gly
225                 230                 235                 240
Lys Ala Ser Ser Ala Lys Gly Gly Tyr Gly Gly Arg Ile Arg Arg Ser
                245                 250                 255
Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro Val
            260                 265
```

<210> 29
<211> 241
<212> PRT
<213> Mus musculus

<400> 29

```
Met Lys Trp Val Thr Phe Leu Leu Leu Leu Phe Val Ser Gly Ser Ala
 1               5                  10                  15
Phe Ser Arg Gly Val Phe Arg Arg Glu Ala His Lys Ser Glu Ile Ala
            20                  25                  30
His Arg Tyr Asn Asp Leu Gly Glu Gln His Phe Lys Gly Leu Val Leu
```

```
         35                  40                  45
Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys Ser Tyr Asp Glu His Ala
     50                  55                  60
Lys Leu Val Gln Glu Val Thr Asp Phe Ala Lys Thr Cys Val Ala Asp
65                  70                  75                  80
Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp
                85                  90                  95
Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu Asn Tyr Gly Glu Leu Ala
            100                 105                 110
Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln
        115                 120                 125
His Lys Asp Asp Asn Pro Ser Leu Pro Pro Phe Glu Arg Pro Glu Ala
    130                 135                 140
Glu Ala Met Cys Thr Ser Phe Lys Glu Asn Pro Thr Thr Phe Met Gly
145                 150                 155                 160
His Tyr Leu His Glu Val Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro
                165                 170                 175
Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn Glu Ile Leu Thr Gln Cys
            180                 185                 190
Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu Thr Pro Lys Leu Asp Gly
        195                 200                 205
Val Lys Glu Lys Ala Leu Val Ser Ser Val Arg Gly Gly Tyr Gly Gly
    210                 215                 220
Arg Ile Arg Arg Ser Tyr Ser Met Glu His Phe Arg Trp Gly Lys Pro
225                 230                 235                 240
Val
```